## AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 09/476,219 Filing Date: December 30, 1999

NON-LINEAR ADAPTIVE VOLTAGE POSITIONING FOR DC-DC CONVERTERS

Dkt: 884.182US1

## IN THE SPECIFICATION

The specification is here amended in support of Figures 6, 7, and 8, which are in turn supported by the specification as it currently stands and by the pending Claims such as is explained above.

On page 3, line 24, on the next line after the text "Figure 5 shows.....consistent with an embodiment of the present invention.", please insert the text:

Figure 6 is a block diagram that illustrates a DC-DC converter, consistent with an embodiment of the present invention.

Figure 7 is a flowchart that illustrates a method of providing a voltage from a DC-DC converter that varies dependent on the current drawn from the DC-DC converter, consistent with an embodiment of the present invention.

Figure 8 is a flowchart that illustrates a method of providing a voltage from a DC-DC converter that varies dependent on the current drawn from the DC-DC converter, consistent with an embodiment of the present invention.

Each of these amendments are supported by the respective Figures 6, 7, and 8, by the respective claims from which Figures 6, 7, and 8 are derived, and from the specification. The specification is further amended in support of Figures 6, 7, and 8, as follows:

On page 7, line 24, starting on a new line after the text "...level and the maximum current load level.", please insert the text:

Figure 6 illustrates in block diagram form the structure of one embodiment of the present invention. A DC-DC converter 601 comprises a sense module 602, operable to sense a current drawn from the DC-DC converter. The DC-DC converter module 601 is also operable via a voltage adjustment module 603 to adjust the voltage provided from the DC-DC converter such that the voltage is at a maximum current voltage level when the current drawn is at a maximum load current level and the voltage is at a minimum current voltage level when the current drawn is at a minimum load current level. The voltage adjusting is implemented in various

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embodiments of the invention in software executing on a processor, or in hardware. In further embodiments of the invention, the DC-DC converter module is operable to supply a substantially linear voltage response with respect to current drawn between the maximum load current level and the minimum load current level. The minimum load current level is selected in some embodiments of the invention to be the minimum current drawn by a load device having a minimum current draw of greater than no current.

Figure 7 is a flowchart that broadly illustrates an exemplary method consistent with the present invention. At 701, the current drawn from a DC-DC converter is sensed. At 702, the DC-DC converter's provided voltage is adjusted such that the voltage is at a maximum current voltage level when the current drawn is at a maximum load current level, and the voltage is at a minimum current voltage level when the current drawn is at a minimum load current level.

Figure 8 is a flowchart that illustrates a more detailed method of adaptive voltage positioning in a DC-DC converter, consistent with an embodiment of the present invention. At 801, the current drawn from the DC-DC converter is sensed. At 802, the sensed current is converted into a voltage signal indicating the sensed current. At 803, the voltage signal that indicates the sensed current is adjusted so that the voltage signal is at a maximum voltage level when the current drawn is at a minimum but nonzero load current, and the voltage signal is at a minimum voltage level when the current drawn is at a maximum load current level. At 804, the adjusted voltage signal is added to the voltage provided by the DC-DC converter.

The text relating to Figure 6 is derived from and supported by originally filed claims 9-15, and more generally by the remainder of the specification. The text relating to Figure 7 is derived from and supported by originally filed claim 1, and more generally by the remainder of the specification. The text relating to Figure 8 is derived from and supported by originally filed claim 8, and more generally from the remainder of the specification.

## IN THE CLAIMS

The claims are not here amended, but are repeated for reference: